

**Figure 1** Kinetic constants of deoxynucleoside kinases

		dThd	dCyd	dAdo	dGuo	ATP
Dm-dNK	$k_c$ (1/s)	15	15	17,8	18,9	15
	$K_m$ ( $\mu$ M)	0,9	1	109	650	1
	$k_c/K_m$ $M^{-1}s^{-1}$	$1,7 \times 10^7$	$1,5 \times 10^7$	$1,6 \times 10^5$	$2,9 \times 10^4$	$1,5 \times 10^7$
hTK1 (a)	$k_c$ (1/s)	4,2				4,2
	$K_m$ ( $\mu$ M)	0,5				140
	$k_c/K_m$ $M^{-1}s^{-1}$	$8,3 \times 10^6$				$3 \times 10^4$
hTK2 (b)	$k_c$ (1/s)	0,3	0,4			0,3
	$K_m$ ( $\mu$ M)	16	16			2
	$k_c/K_m$ $M^{-1}s^{-1}$	$1,9 \times 10^4$	$2,5 \times 10^4$			$1,5 \times 10^5$
hdCK (c)	$k_c$ (1/s)		0,073	0,31	0,4	0,073
	$K_m$ ( $\mu$ M)		1	120	150	10
	$k_c/K_m$ $M^{-1}s^{-1}$		$7,3 \times 10^4$	$2,6 \times 10^3$	$2,7 \times 10^3$	$7,3 \times 10^3$
hdGK (d)	$k_c$ (1/s)			$1,35 \times 10^{-3}$	$2,1 \times 10^{-3}$	
	$K_m$ ( $\mu$ M)			60	7,6	
	$k_c/K_m$ $M^{-1}s^{-1}$			$2,3 \times 10^1$	$2,8 \times 10^2$	
E. Coli TK (e)	$k_c$ (1/s)	1,6				1,6
	$K_m$ ( $\mu$ M)	9				500
	$k_c/K_m$ $M^{-1}s^{-1}$	$1,8 \times 10^5$				$3,2 \times 10^3$
HSV TK (f)	$k_c$ (1/s)	0,21				0,21
	$K_m$ ( $\mu$ M)	0,6				32
	$k_c/K_m$ $M^{-1}s^{-1}$	$3,8 \times 10^5$				$6,6 \times 10^3$
Lactobac. dAK/dCK (g) or dGK	$k_c$ (1/s)		0,91	0,05	0,7	0,91
	$K_m$ ( $\mu$ M)		4,5	8,4	7,8	1000
	$k_c/K_m$ $M^{-1}s^{-1}$		$2 \times 10^5$	$6 \times 10^3$	$8,9 \times 10^4$	$9,1 \times 10^2$

Figure 2

d-CMP Production with Nucleoside Kinase

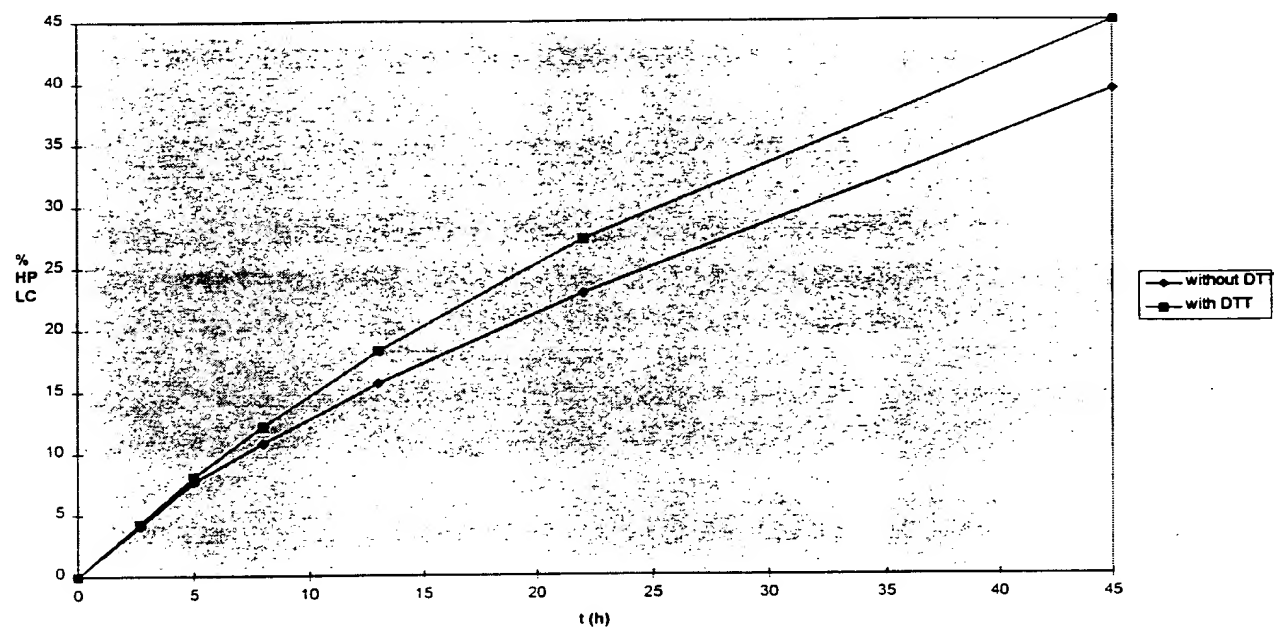


Figure 3

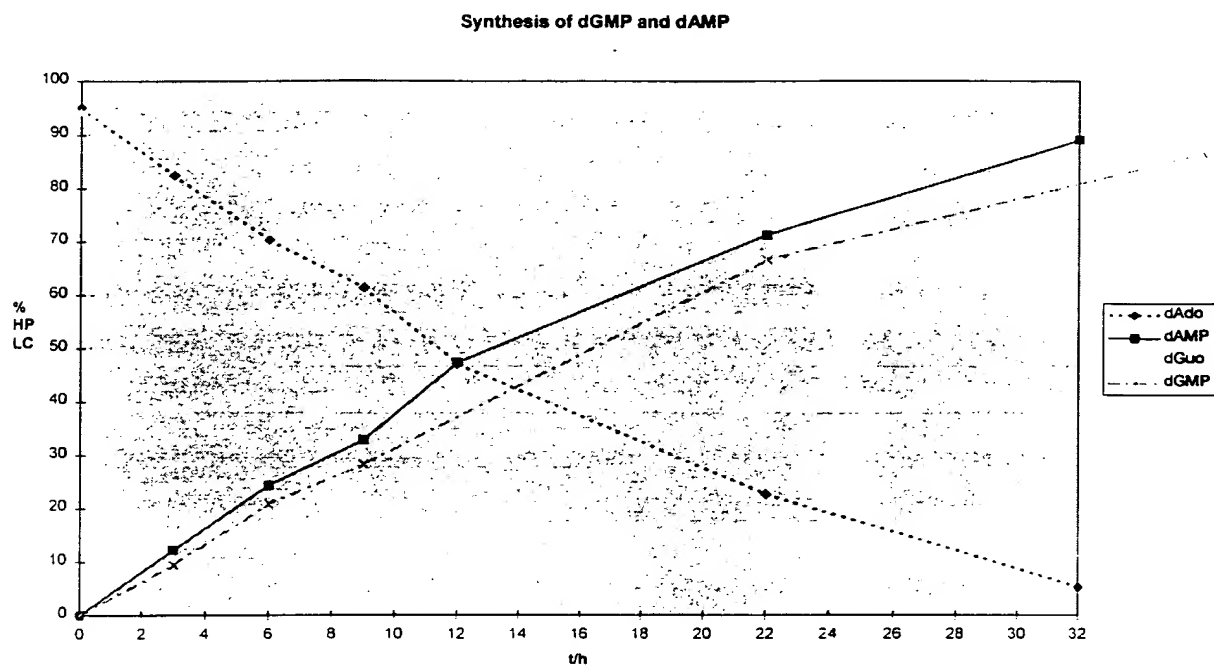
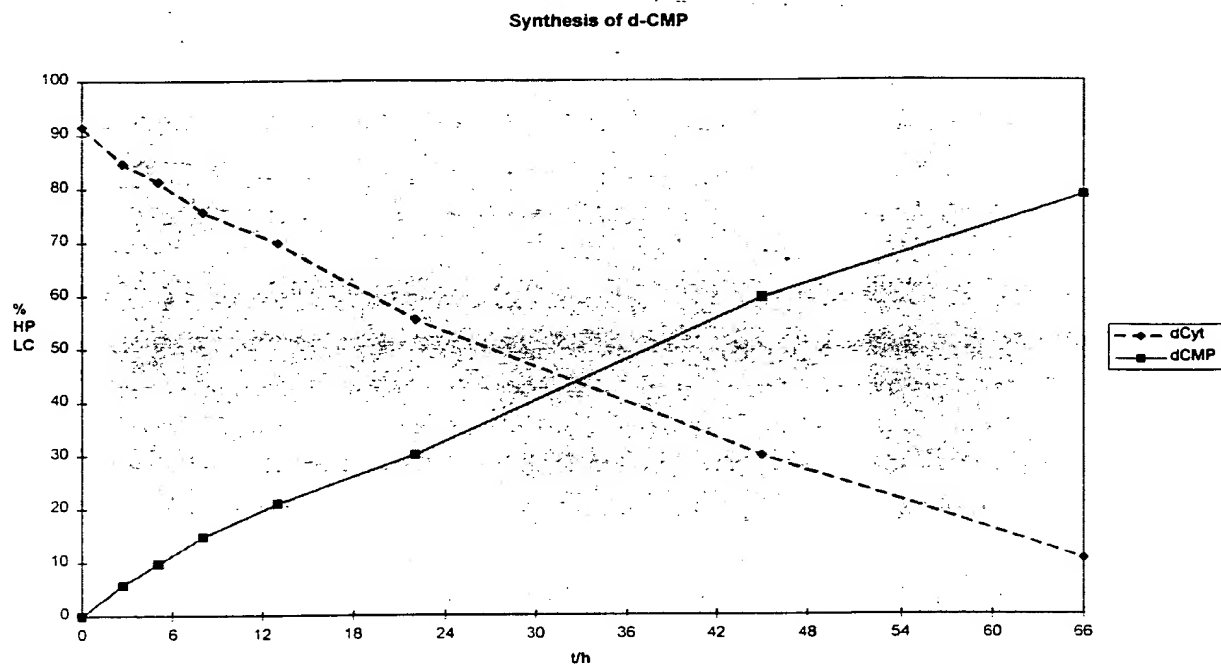


Figure 4



# Figure 5

Seq. ID No.: 1

**ATG** GCG GAG GCA GCA TCC TGT GCC CGA AAG GGG ACC AAG TAC GCC  
GAG GGC ACC CAG CCC TTC ACC GTC CTC ATC GAG GGC AAC ATC GGC  
AGC GGG  
AAG ACC ACG TAT TTG AAC CAC TTC GAG AAG TAC AAG AAC GAC ATT  
TGC CTG  
CTG ACC GAG CCC GTC GAG AAG TGG CGC AAC GTC AAC GGG GTA AAT  
CTG CTG  
GAG CTG ATG TAC AAA GAT CCC AAG AAG TGG GCC ATG CCC TTT CAG  
AGT TAT  
GTC ACG CTG ACC ATG CTG CAG TCG CAC ACC GCC CCA ACC AAC AAG  
AAG CTA  
AAA ATA ARG GAG CGC TCC ATT TTT AGC GCT CGC TAT TGC TTC GTG  
GAG AAC  
ATG CGA CGA AAC GGC TCG CTG GAG CAG GGC ATG TAC AAT ACG CTG  
GAG GAG  
TGG TAC AAG TTC ATC GAA GAG TCC ATT CAC CTG CAG GCG GAC CTC  
ATC ATA  
TAT CTG CGC ACC TCG CCG GAG GTG GCG TAC GAA CGC ATC CGG CAG  
CGG GCT  
CGT TCT GAG GAG AGC TGC GTG CCG CTT AAG TAC CTT CAG GAG CTG  
CAT GAG  
TTG CAC CAG GAC TGG TTG ATA CAC CAG AGA CGA CCG CAG TCG TGC  
AAG GTC  
CTA GTC CTC GAT GCC GAT CTG AAC CTG GAA AAC ATT GGC ACC GAG  
TAC CAG  
CGC TCG GAG AGC AGC ATA TTC GAC GCC ATC TCA AGT AAC CAA CAG  
CCC TCG  
CCG GTT CGT GTG TCG CCC AGC AAG CGC CAG AGG GTC GCC AGA **TAA**

6254400

Figure 6

Temperature dependence of the Dm-kinase activity

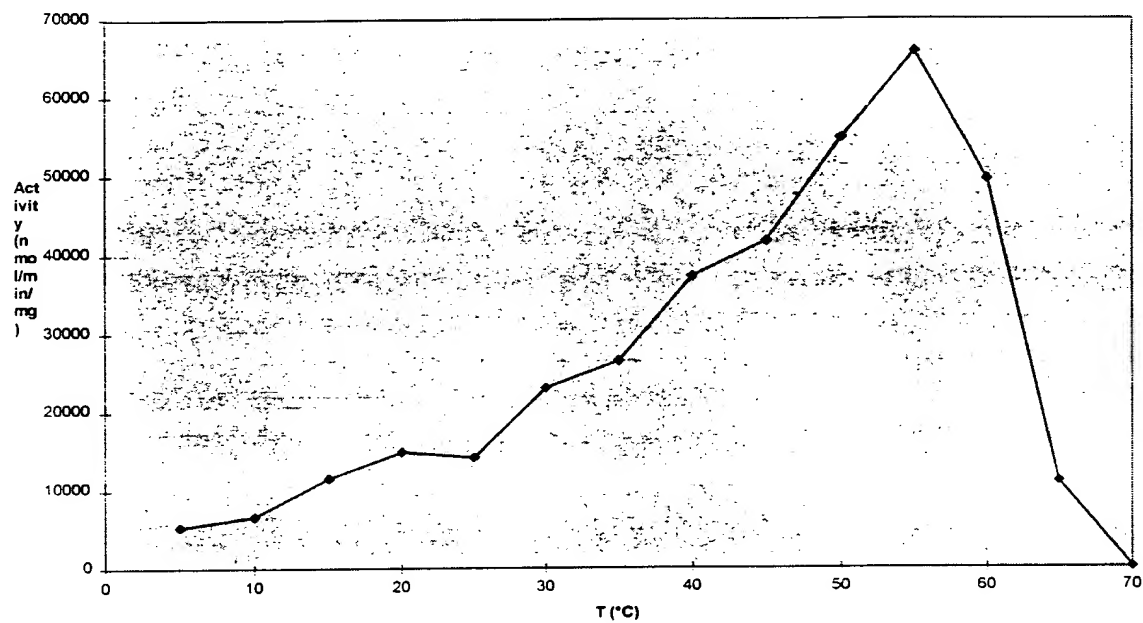


Figure 7A

Stability of recombinant DM-kinase compared to native DM-kinase

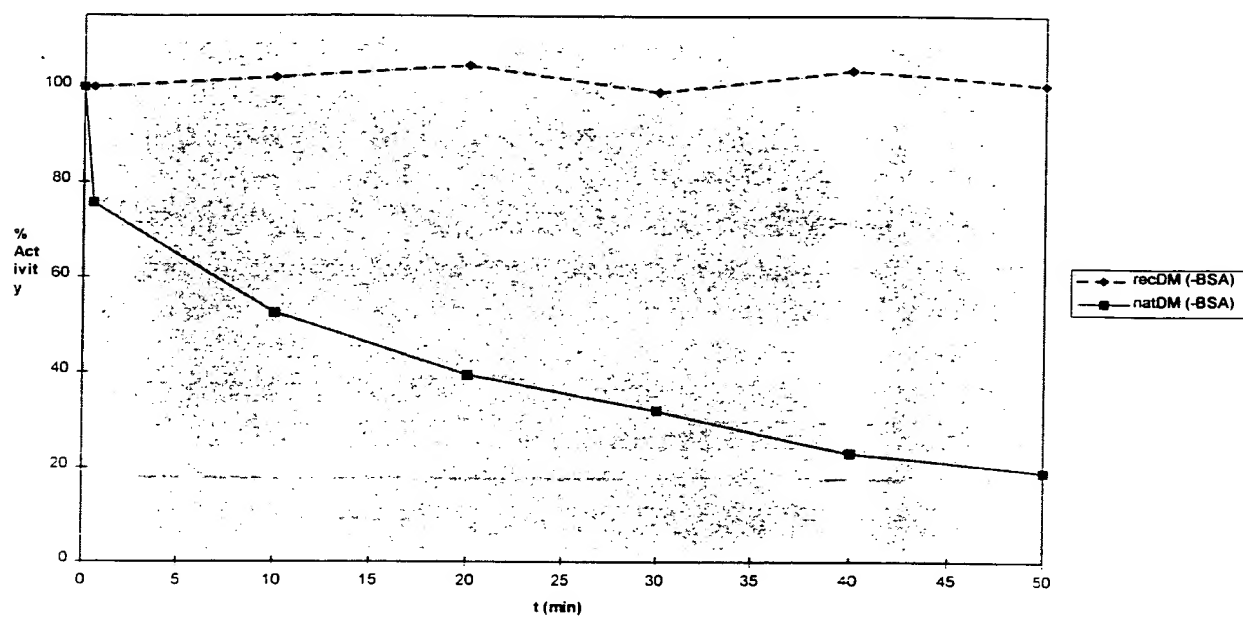


Figure 7B

Stability of recombinant DM-kinase compared to native DM-kinase

